UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

UUSI, LLC D/B/A NARTRON, Plaintiff, v. APPLE INC., Defendant.	Case No. Judge:

COMPLAINT AND DEMAND FOR JURY TRIAL

NOW COMES Plaintiff UUSI, LLC d/b/a Nartron ("Nartron") for its Complaint for patent infringement against Defendant APPLE INC. ("Apple"), and alleges as follows:

PARTIES

1. Nartron is a Michigan limited liability company having a principal place of business at 5000 North US Highway 131, Reed City, Michigan 49677. Nartron also maintains places of business at 180 High Oak Street, Suite 202, Bloomfield Hills, Michigan 48304 and 9357 General Drive, Suite 121, Plymouth, Michigan 48170.

2. Apple is a California corporation with its principal place of business at 1 Infinite Loop, Cupertino, California 95014. Apple also maintains regular and established places of business in this district, including 100 Briarwood Circle, Ann

Arbor, Michigan 48180 and 2800 W. Big Beaver, Troy, Michigan 48084. In addition, Apple is registered to do business in Michigan and can be served at The Corporation Company, 40600 Ann Arbor Rd. E. Ste. 201, Plymouth, Michigan 48170.

3. Apple is a global company that offers its products and/or services, including those accused herein of infringement, to customers and potential customers located throughout Michigan, and in particular, customers located in the Eastern District of Michigan. From its regular and established places of business within the Eastern District of Michigan, Apple committed acts of infringement by selling and offering to sell infringing products.

JURISDICTION AND VENUE

4. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. Jurisdiction as to these claims is conferred on this Court by 35 U.S.C. §§ 1331 and 1338(a).

5. Venue is proper in the Eastern District of Michigan under 28 U.S.C. § 1400(b). Apple transacts business in this judicial district, has committed acts of patent infringement in this judicial district, and maintains regular and established places of business in this district, including Apple Stores, as set forth above.

6. This Court has personal jurisdiction over Apple. Apple has conducted and continues to conduct business within the State of Michigan. Apple, directly or through intermediaries (including distributors, retailers, and others), ships, distributes, offers for sale, sells, and advertises its products and offers its products and services in the United States, the State of Michigan, and the Eastern District of Michigan. Apple has purposefully and voluntarily sold infringing products and performed infringing services with the expectation that they will be purchased and used by consumers in the Eastern District of Michigan. These infringing products and services have been and continue to be purchased and used by consumers in the Eastern District of Michigan. Jurisdiction over Apple in the matter is also proper inasmuch as Apple has voluntarily submitted itself to the jurisdiction of this Court by commencing litigations within the State of Michigan, by registering to do business in the State of Michigan, and by appointing a registered agent in the State of Michigan.

NARTRON AND THE PATENT-IN-SUIT

7. Today, touch sensing devices, and particularly, touchscreen devices, can be found everywhere. The proliferation of touchscreen devices, like smartphones and tablets, have ushered in an era where it is now unthinkable to go about daily tasks without a smartphone or tablet nearby. The presence of touchscreens, however, is not limited to smartphones and tablets. They can be

found on laptops, ATMs, kiosks, and vending machines in everyday locations like homes, cars, restaurants, and stores.

8. The touchscreen's path to preeminence did not happen overnight. Established in 1967, Nartron was an early pioneer in touchscreen technology. Nartron is credited with inventing the electronic touch screen in 1995. For example, Nartron's "Smart Touch®" sensing technology provided a breakthrough in human interface technology by giving direct access to computer power, such as with highly successful handheld devices and smartphones.

9. Nartron's experienced product development team located at its 200 acre complex in Reed City, Michigan has been awarded several hundred patents for exceptional innovation. Nartron's leadership in innovation was recognized by Inc. Magazine, which named Nartron as one of America's Top 50 Innovators and one of the "Top 30" firms for leading the technological, industrial, and social movement in the United States that has taken place over the past 30 years.

10. Nartron's patent at issue in this case is U.S. Patent No. 5,796,183 ("the '183 patent"). On August 18, 1998, the United States Patent and Trademark Office ("PTO") duly and lawfully issued the '183 patent, titled "Capacitive Responsive Electronic Switching Circuit." On April 29, 2013, the PTO duly and lawfully issued a first Reexamination Certificate for the '183 patent (U.S. Patent

No. 5,796,183 C1). On June 27, 2014, the PTO duly and lawfully issued a second Reexamination Certificate for the '183 patent (U.S. Patent No. 5,796,183 C2). The '183 patent expired on January 31, 2016. A copy of the '183 patent, including both Reexamination Certificates, is attached as Exhibit A and incorporated into this complaint by reference.

11. The '183 patent most recently underwent *inter partes* review ("IPR") at the Patent Trial and Appeal Board ("PTAB"). On April 15, 2016, Samsung Electronics Co., Ltd. sought IPR of claims 37–41, 43, 45, 47, 48, 61–67, 69, 83–86, 88, 90, 91, 94, 96, 97, 99, 101, and 102 of the '183 patent. The PTAB instituted IPR on all petitioned claims except claims 37-39. On October 18, 2017, the PTAB issued its final written decision and held all instituted claims patentable.

12. UUSI, LLC is the owner and assignee of all right, title and interest in and to the '183 patent. Doing business as Nartron, UUSI holds the right to sue and recover damages for infringement thereof, including past damages.

13. The '183 patent describes and claims a capacitive response electronic switching circuit. Capacitive response electronic switching circuits are implemented on touchscreen devices, such as touchscreen smartphones and tablets. The particular capacitive response electronic switching circuit claimed in the '183 patent makes possible, for example, a 'zero force' manual electronic switch." '183

patent, 1:6–9. Zero force touch switches have no moving parts and no contact surfaces that directly switch loads. *Id*. at 1:40–41. Instead, such switches detect an operator's touch and use solid state electronics to switch loads or activate mechanical relays. *Id*. at 1:42–44. "A common solution used to achieve a zero force touch switch has been to make use of the capacitance of the human operator." *Id*. at 3:12–14. The '183 patent recites three methods used by capacitive touch switches to detect an operator's touch, one of which relies on the change in capacitive coupling between a touch terminal and ground. *Id*. at 3:14–15, 3:44–46. In this method, "[t]he touch of an operator then provides a capacitive short to ground via the operator's own body capacitance that lowers the amplitude of oscillator voltage seen at the touch terminal." *Id*. at 3:52–56. Significantly, the operator of a capacitive touch switch using this method need not come in conductive contact with the touch terminal. *Id*. at 3:57–59. Rather, the operator needs only to come into close proximity of the switch. *Id*.

14. Figure 11 of the '183 patent depicts a "multiple touch pad circuit" including "an array of touch circuits." *Id*. at 18:34–46. The '183 patent recognizes that placing capacitive touch switches in dense arrays can result in unintended actuations. *Id*. at 3:65–4:3. One method of addressing this problem known in the art involves placing guard rings around each touch pad. *Id*. at 4:4–10. Another known method of addressing this problem is to adjust the sensitivity of the touch

pad such that the operator's finger must entirely overlap a touch terminal. *Id*. at 4:10–14. "Although these methods (guard rings and sensitivity adjustment) have gone a considerable way in allowing touch switches to be spaced in comparatively close proximity, a susceptibility to surface contamination remains as a problem." *Id*. at 4:14–18.

15. The '183 patent overcomes the problem of unintended actuation of small capacitive touch switches, for example, "by using the method of sensing body capacitance to ground in conjunction with redundant detection circuits." *Id*. at 5:33–35. Specifically, the '183 patent's touch detection circuit operates at frequencies at or above 50 kHz, and preferably at or above 800 kHz, in order to minimize the effects of surface contamination on the touch pads. Operating at these frequencies also improves sensitivity, allowing close control of the proximity required for actuation of small-sized touch terminals in a close array, such as a keyboard. *Id*. at 5:48–57. This results in an improvement to touchscreens, particularly, in mobile devices.

16. Claim 40 provides an example of the claimed subject matter. In claim 40, a microcontroller takes a periodic signal from an oscillator with a pre-defined frequency, and selectively provides a signal output frequency to each row of input touch terminals. These input touch terminals define adjacent areas on a substrate

for a user to provide inputs by proximity or touch. When touched by an operator, a detector circuit responds to signals from the oscillator through the microcontroller and the presence of a user's body capacitance to ground to provide a control output signal. The input and output frequencies are selected such that the change in impedance caused by the user's touch differs from any change in impedance that may create an electrical path caused by contaminates on the substrate.

APPLE'S INFRINGEMENT OF THE PATENT-IN-SUIT

17. Apple's accused devices (the "Accused Products") which infringe one or more claims of the '183 patent include products, such as the Apple iPhone, Apple iPod, and Apple iPad (and all relevant models and versions thereof). For example, the Accused Products include at least iPhone 5, iPhone 5c, iPhone 5s, iPhone SE, iPhone 6, iPhone 6 Plus, iPhone 6s, iPhone 6s Plus, iPod Touch (4th generation), iPod Touch (5th generation), iPod Touch (6th generation), iPod nano (7th generation), iPad, iPad 2, iPad (3rd generation), iPad (4th generation), iPad (5th generation), iPad mini 2, iPad mini 3, iPad mini 4, iPad Air, iPad Air 2, and iPad Pro (12.9-inch).

18. The Accused Products comprises of capacitive touch sensing devices. For example, the Accused Products allow users to make selections and move objects by moving their finger proximity to or in contact with a touch sensing

surface, like touchscreens (e.g., the iPhone 6s Plus includes a 5.5-inch (diagonal) widescreen LCD Multi-Touch display). In the Accused Products, such surfaces include touch sensing points that senses a user's finger. The Accused Products recognize such touches by users, interpret the users' input, and thereafter perform actions based on the input.

19. On information and belief, the Accused Products use, among other things, touch controller chips such as those manufactured by Broadcom (e.g., BCM5976) and Texas Instruments (e.g., TI 343S0694) to recognize and interpret the users' input. For example, the touchscreen controller, individually or in combination of other hardware and software components, takes a periodic signal from an oscillator with a pre-defined frequency, and selectively provides a signal output frequency to each row of input touch terminals. On the touchscreen of the Accused Products, the input touch terminals define adjacent areas on a substrate for a user to provide inputs. When touched (or in close proximity) by the user, a detector circuit within the Accused Products respond to signals from the oscillator through the touchscreen controller and the presence of the user's body capacitance to ground to provide a control output signal. The Accused Products use input and output frequencies such that the change in impedance caused by the user's touch differs from any change in impedance that may create an electrical path caused by

contaminates on the substrate. Based on the above, the Accused Products infringe at least, but not limited to, claim 40 of the '183 patent.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 5,796,183 C1 AND C2

20. Nartron incorporates herein by reference the allegations set forth in paragraphs 1-19 of this Complaint as though fully set forth herein.

21. Nartron is informed and believes, and thereon alleges, that Apple has directly infringed, literally and/or under the doctrine of equivalents, the '183 patent by making, using, selling, offering to sell and/or importing products, including but not limited to the Accused Products. Upon information and belief, Apple used the Accused Products by, at least, (1) its own internal non-testing business purposes, (2) while testing the Accused Products, and (3) while providing technical support and repair services for the Accused Products to Apple's customers.

22. Nartron is informed and believes, and thereon alleges, that Apple also has indirectly infringed the '183 patent by inducing others to infringe and/or contributing to the infringement of others, including third party users of the Accused Products in this district and elsewhere in the United States. Specifically, Nartron is informed and believes, and thereon alleges, that Apple has actively induced the infringement of the '183 patent 35 U.S.C. § 271(b),at least by actively

inducing the infringing use of the Accused Products by third party users in the United States. Nartron is informed and believes, and thereon alleges, that Apple knew or should have known that its conduct would induce others to use the Accused Products in a manner that infringes the '183 patent. Nartron is informed and believes, and thereon alleges, that these third parties have infringed the '183 patent in violation of 35 U.S.C. § 271(a) by using the Accused Products. Nartron is informed and believes, and thereon alleges, that Apple through at least its website at www.apple.com, support.apple.com, discussions.apple.com, and www.youtube.com/user/apple, its online user manuals, marketing materials, and help materials actively induced its customers to infringe the '183 patent.

23. Nartron is informed and believes, and thereon alleges, that Apple has contributorily infringed the '183 patent 35 U.S.C. § 271(c) by importing, selling and/or offering to sell within the United States the Accused Products (or components thereof) that constitute a material part of the claimed invention and are not staple articles of commerce suitable for substantial non-infringing use. Nartron is informed and believes, and thereon alleges, that these third parties have infringed the '183 patent in violation of 35 U.S.C. § 271(a) by using the Accused Products.

24. Apple has been aware of the '183 patent since at least 2007. In 2007, Nartron provided written communications to Apple in which Nartron notified Apple of the '183 patent, explained how certain Apple touchscreen products infringed claims of the '183 patent, and offered to enter into licensing discussions. Apple refused to consider a license, instead insisting that its touchscreen products did not infringe any claims of the '183 patent and asserting that all claims of the '183 patent were invalid.

25. Apple's infringement of the '183 patent was willful. Apple committed acts of infringement despite having actual notice of the '183 patent and a high likelihood that its actions constituted infringement. Apple knew or should have known that its actions constituted an unjustifiably high risk of infringement. Thus, Apple's infringement was deliberate and exhibited bad faith, entitling Nartron to enhanced damages.

26. Nartron has suffered damages as a result of Apple's infringement of the '183 patent in an amount to be proven at trial.

PRAYER FOR RELIEF

WHEREFORE, Nartron prays for judgment as follows:

A. In favor of Nartron that Apple has infringed the '183 patent;

B. Requiring Apple to pay Nartron's actual damages;

C. Requiring Apple to pay to Nartron supplemental damages for any continuing post-verdict infringement up until entry of the final judgment, together with an accounting as needed;

D. Requiring Apple to pay to Nartron pre-judgment and post-judgment interest on the damages awarded at the maximum rate provided by law;

E. Requiring Apple to pay to Nartron all costs of this action;

F. Requiring Apple to pay enhanced damages under 35. U.S.C. § 284;

G. Requiring Apple to pay attorneys' fees under 35 U.S.C. § 285;

H. Enjoining Apple, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them from further infringement of the '183 patent as described in this action;

I. In the event a final injunction is not awarded, awarding a compulsory ongoing royalty; and

J. Such other and further relief as the Court deems just and equitable.

JURY TRIAL DEMAND

Nartron hereby demands a jury for all issues so triable.

Dated: November 22, 2017

Respectfully Submitted,

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